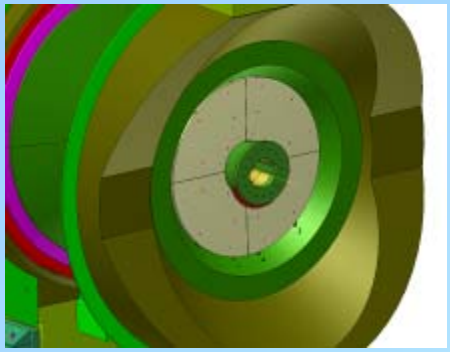
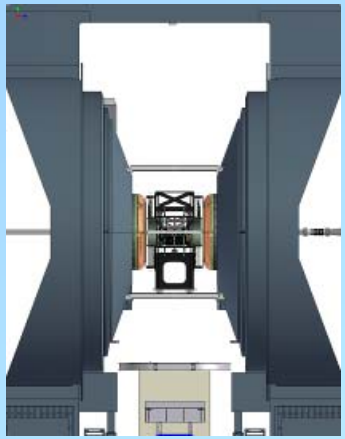
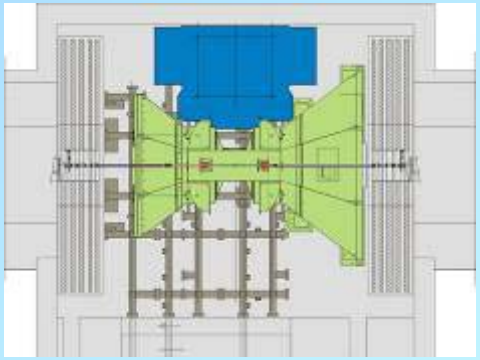
PHENIX

TECHNICAL SUPPORT 2010

PHENIX WEEKLY PLANNING


4/22/2010

Don Lynch

Ongoing Tasks for Run 10

TECHNICAL SUPPORT 2010

Task	Start Date	End Date
Install rack components in RPC3 N racks	in progress	6/1/2010
Attach cables to RPC3 N racks and to Detector ½ octants	in progress	6/1/2010
Commissioning Tests (HV, Mixed gas and Freon only)	5/5/2010	6/11/2010
Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)	In Progress	6/30/2010
AH Crane 110 switch for lockout	In Progress	6/30/09

PHENIX Startup Checklist Status

Item	Responsibility	Status
Item 12: Dumb Waiter	Lynch	Done??

PHENIX

TECHNICAL SUPPORT 2010

This Week:

- Scheduled maint. Today
- Run 10 tech support
- Future upgrade support as necessary
- Continue VTX support structure design
- Completed VTX thermal design calculations
- Complete RPC absorber design
- 2010 summer shutdown prep continues:

  VTX & BP assembly/installation parts & fixtures procurement & fabrication

  RPC3 S assembly/installation fixtures parts & fixtures procurement & fabrication
- Evaluate AH ramp ground water problems with PE and CAD
- All Hands Meeting tomorrow 1:30 PHYSICS Large Seminar Room

Next Week

PHENIX

TECHNICAL SUPPORT 2010

VTX Support frame design continues

Resolve BP legal issues

Maintenance access Wed 4/21/2010:

Prepare for absorber installation review

Complete VTX Cooling analyses: Done except for big wheels

Prep for 2010 shutdown

Begin preparing for VTX installation review (including BP)

Future upgrades support

PHENIX

TECHNICAL SUPPORT 2010

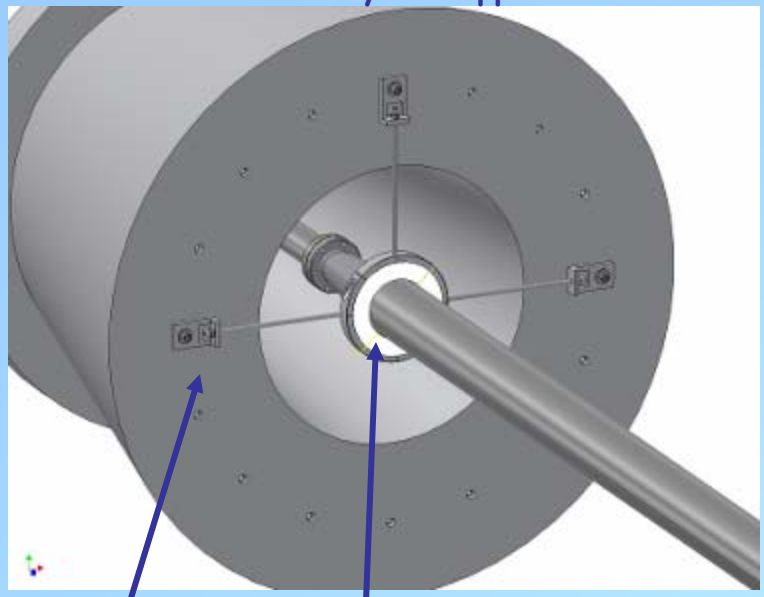
2010 Tasks

2010 Tasks	Start Date	End Date
Run 10	In progress	6/21
VTX Installation Plan (Final)	In progress	5/31
RPC3S Installation Plan (Final)	In progress	5/31
Design support structure, alignment scheme for VTX	In progress	3/31
Specify and procure electronics racks and support equipment for VTX	In progress	5/31
Fabricate beam pipe supports	In progress	5/1
Beampipe NEG coating (CERN)	4/15?	5/31?
Fabricate/procure parts for RPC3 S installation	In progress	5/1
Fabricate/procure parts for VTX installation	In progress	6/1
End of run 10	6/23	6/23
End of Run Party	~6/11	~6/11
Prep IR for shutdown	6/1	7/1
Complete unfinished business for MuTrgr FEE & RPC3 North	6/23	8/1
Install Beam pipe	7/1	9/1
Install VTX	8/1	11/1
Install RPC3 South	6/23	11/1
2010 Shutdown Other Tasks	6/23	12/1

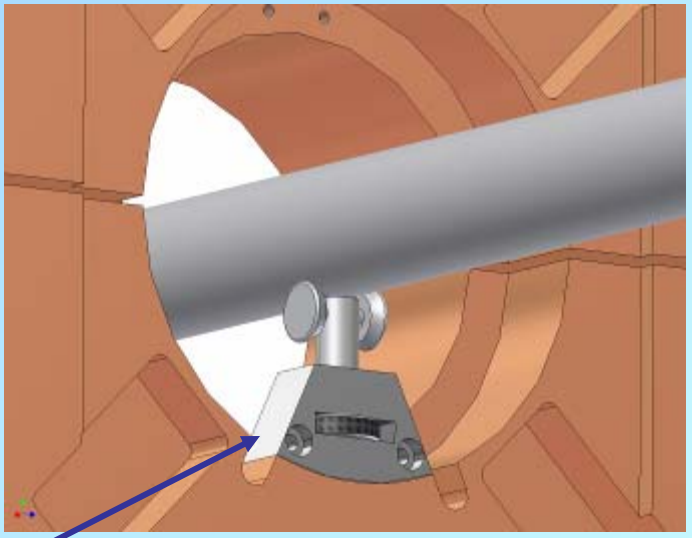
PHENIX

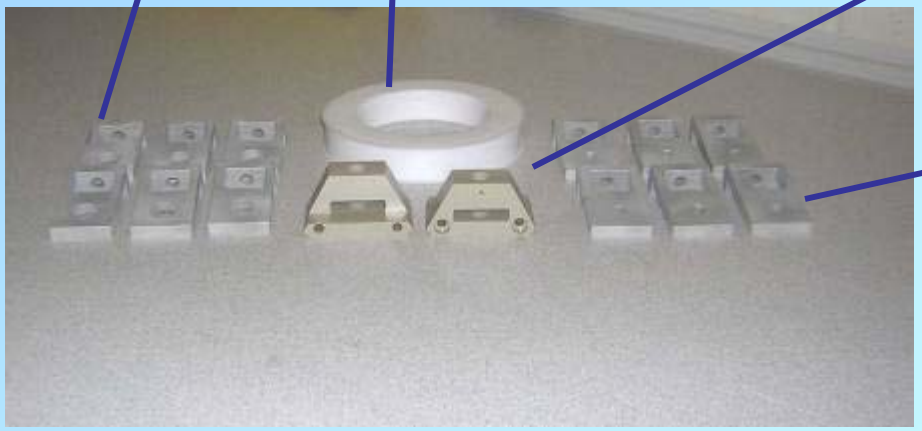
TECHNICAL SUPPORT 2010

South BBC Cavity BP support

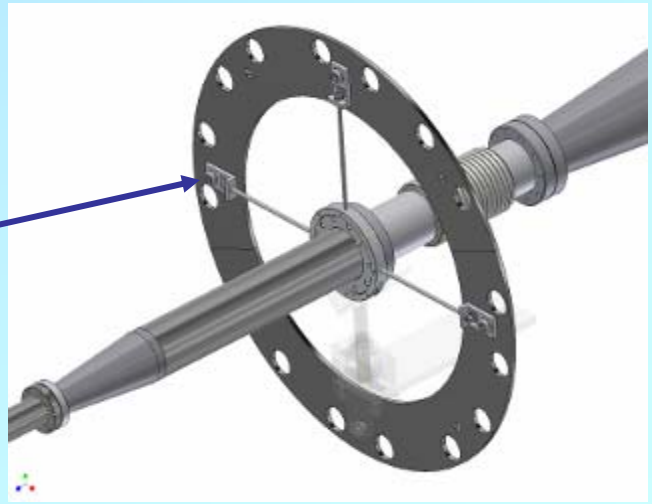


CM central BP supports (2 req'd)





BP support components from CS

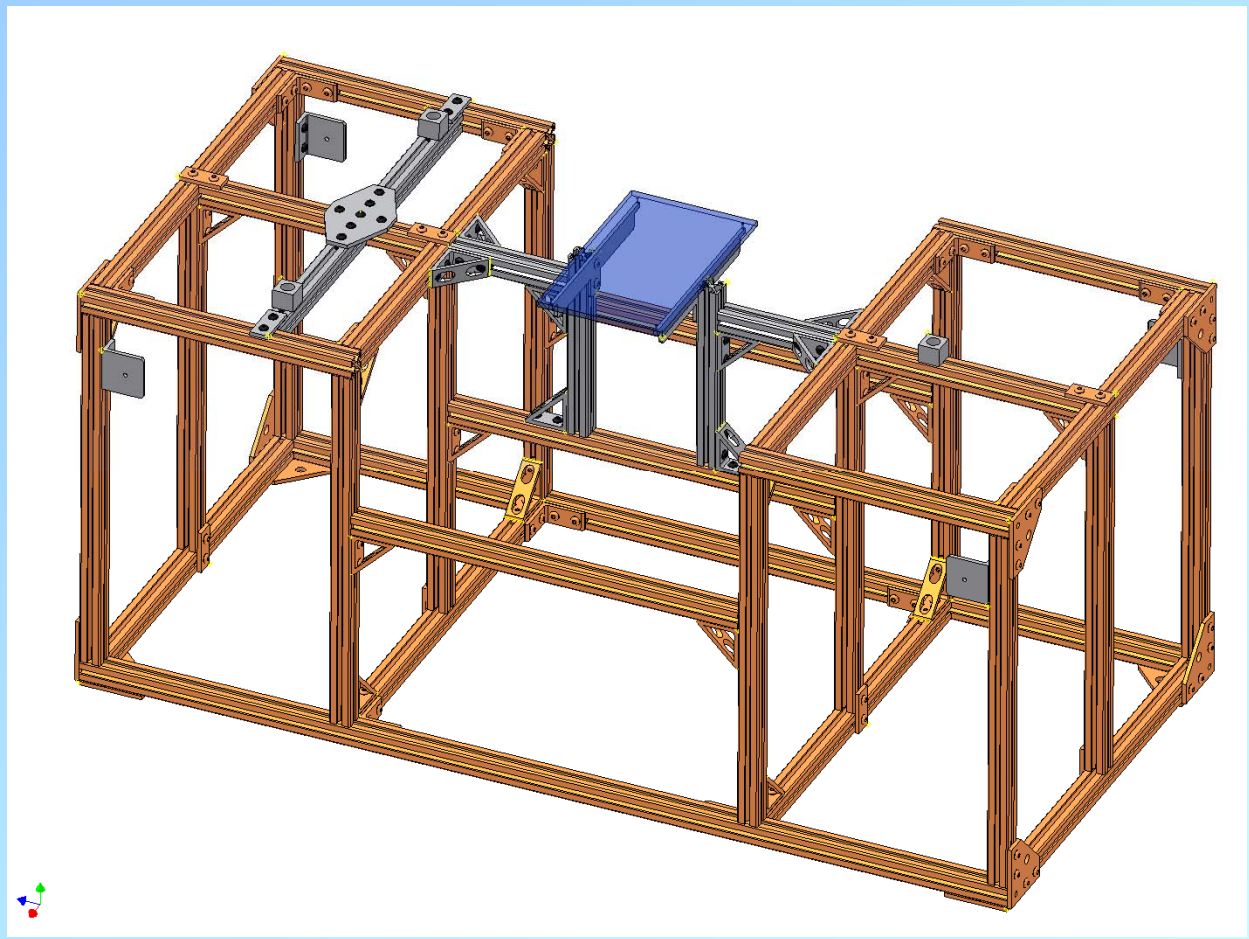


North MPC Cavity BP support

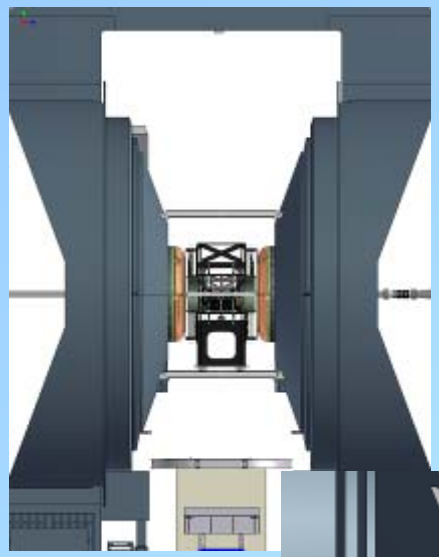
PHENIX

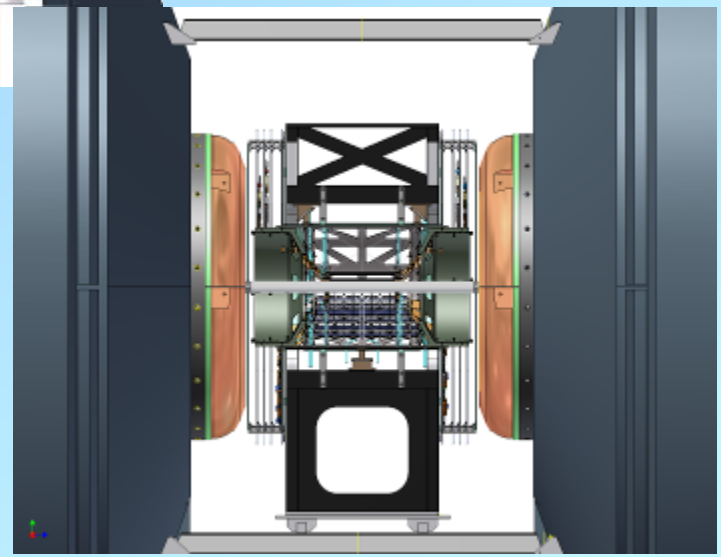
TECHNICAL SUPPORT 2010

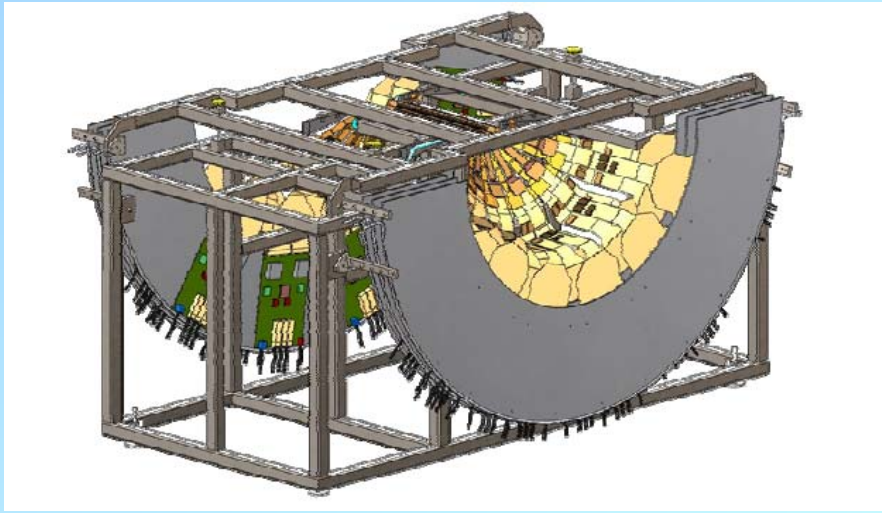
VTX Assembly Fixture (3 others are similar)

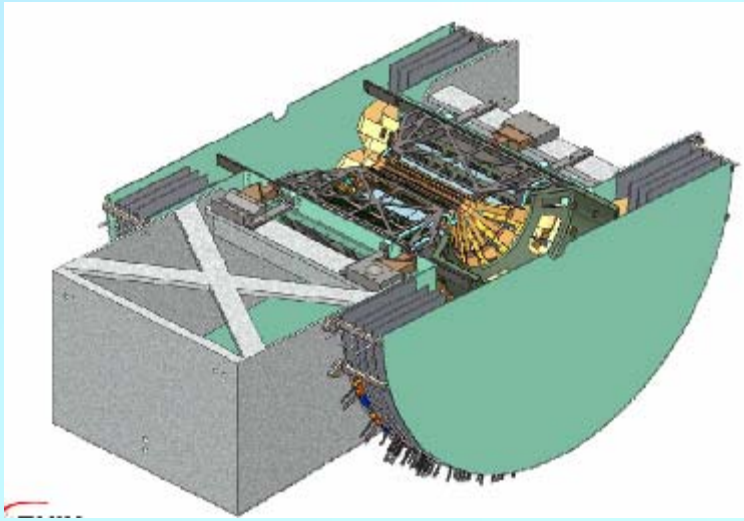


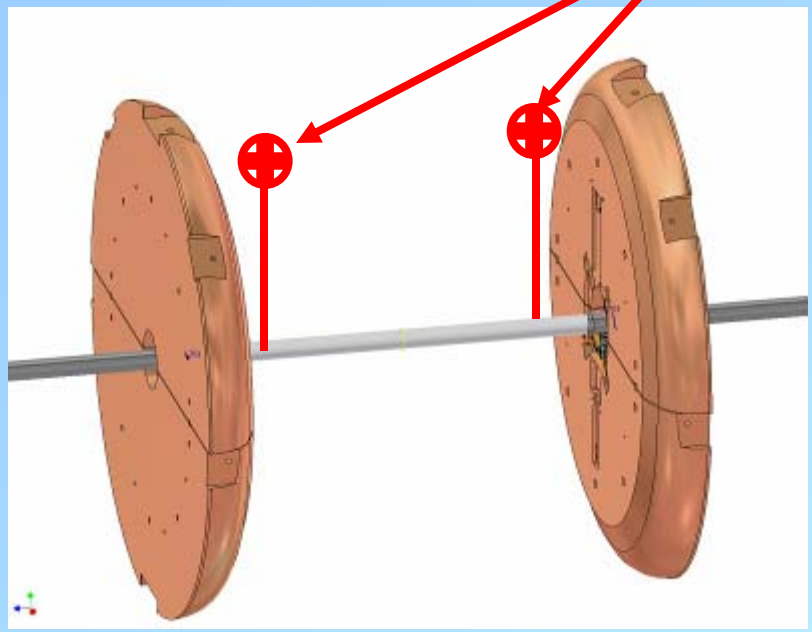
VTX Support Structure Base Assembly Design In Progress Fixtures being re-designed at PHENIX





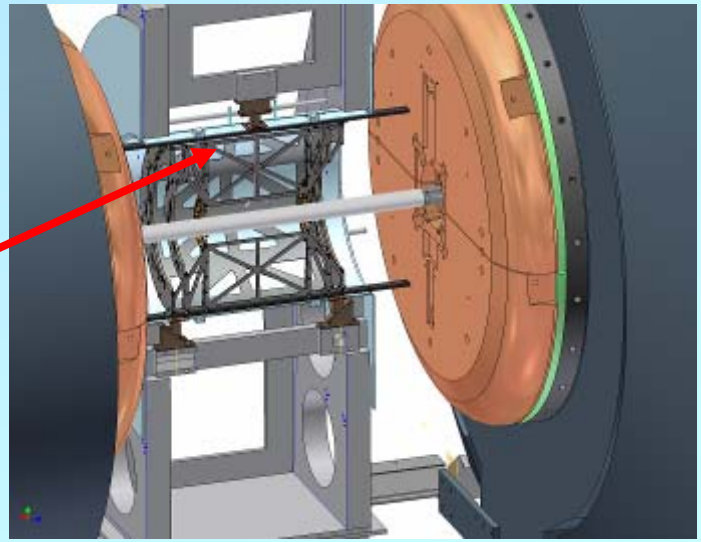






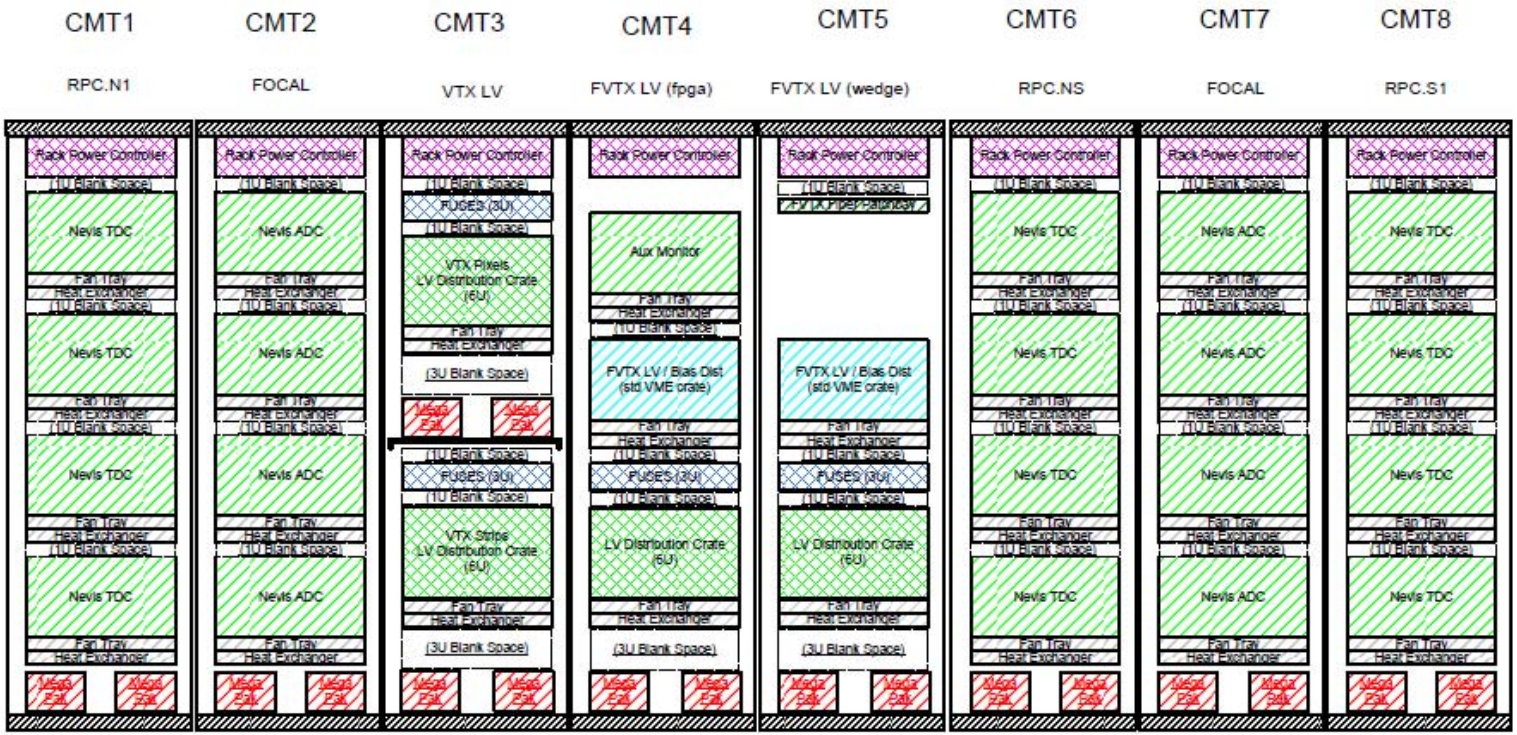
Survey Targets and fixtures TBD
Must be able to align BP to req'd radial and angular accuracy without VTX and with VTX in clamshells open configuration.

½ of VTX detector support structure



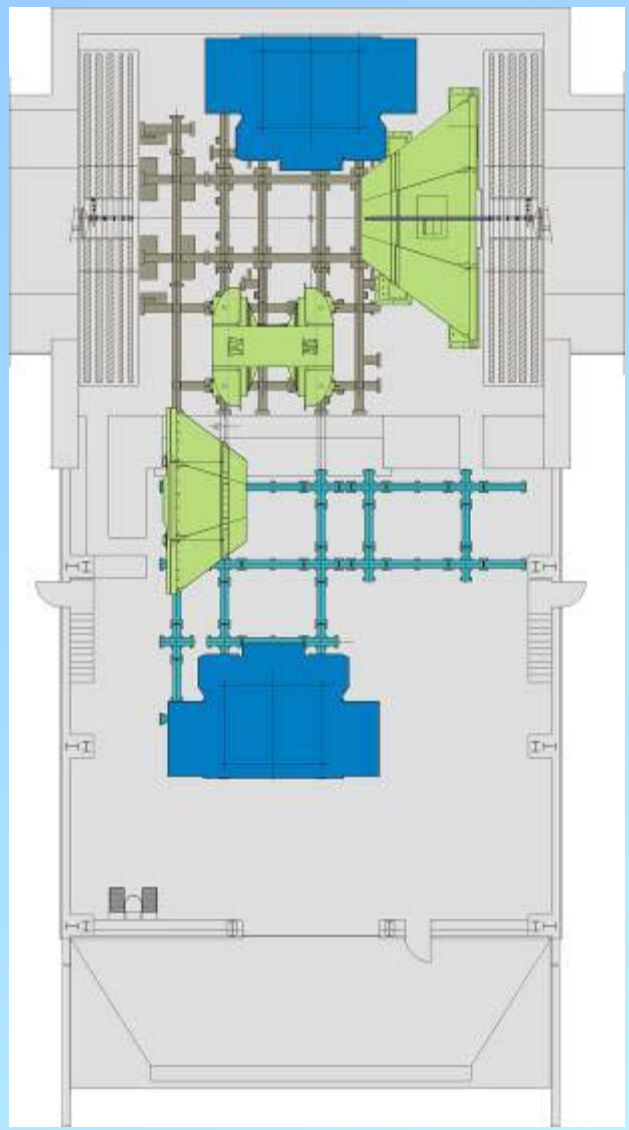
Bridge Electronics Concept

PHENIX Bridge Racks



S. Boose
3/26/2010

TECHNICAL SUPPORT 2010



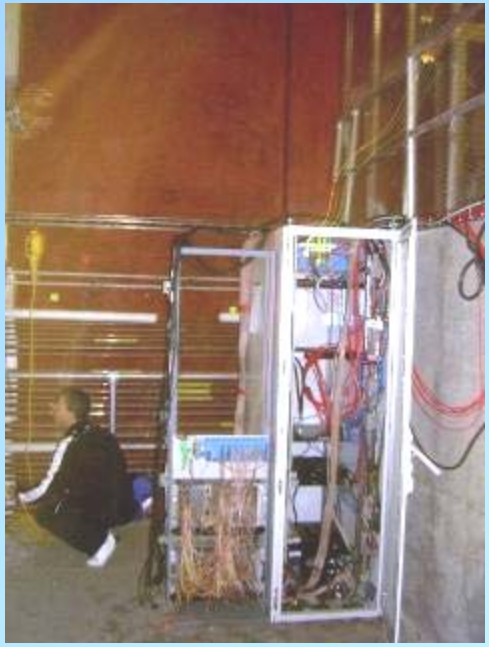
Major PHENIX Components during shutdown when Old beampipe is out and new beampipe is ready to go in. Approximately last week in July.

This is the optimal point for DC, MuTr Station 1, and/or RPC absorber work. Potential work in these areas is still under review by PM.

Note: Absorber installation to be done during this period. MuTr station 1 work shall be limited to work in situ (i.e. station 1 will not be removed). Similarly DC/PC1 work will be limited to work which can be accomplished with the DC in situ, although, if requested, it may be possible to translate the DC on its mounting rails to allow limited access to DC/PC1 electronics.

PHENIX

TECHNICAL SUPPORT 2010



PHENIX

TECHNICAL SUPPORT 2010

New Beampipe Pre-Shutdown Prep

Task	Due By	NOTES
Design central beam pipe and new transition sections	Done	
Order beampipe	Done	Brush Wellman
Order new design transitions	Done	CAD
Order replacements for existing transitions and spools	Done	CS
Conceptual and mechanical design beampipe supports	Done	Done
Beampipe fabrication	Done	Done
Receive bp and all beampipe sections	Done	CAD
Beampipe Installation Review (Preliminary)	Done	Done
Bp and sections acceptance tests and inspection	In Progress	
Send beampipe to CERN for NEG Coating	4/15/2010?	
Fabricate beampipe supports	5/31/2010	In Progress
Receive bp back at BNL	5/31/2010?	May be delayed
Memorial Day: Lab Holiday	5/31/2010	Enjoy the weekend
Choreograph removal of old beampipe and installation of new (final)	6/1/2010	
Final acceptance and inspection bp and sections	6/15/2010	
Test and inspect beampipe supports	6/15/2010	
Beampipe Installation Review (Final)	6/15/2010	

PHENIX

TECHNICAL SUPPORT 2010

VTX Subassembly, Top Assembly, Installation and Integration Prep

Task	Due By	NOTES
Conceptual and mechanical design of installation, structural support and detector alignment	4/2/2010	In Progress
Installation Review (ESRC)	~4/15/2010	After analyses done
Beampipe & VTX Installation Work Permits	5/31/2010	
Memorial Day: Lab Holiday	5/31/2010	Enjoy the weekend
Subassemblies complete ready for integration into hemispheres	6/30/2010	
Receive, inspect, test, rework and qualify assembly tools and fixtures, electronics racks and support	6/30/2010	VTX Group
Fabricate/procure detail components for installation, support and alignment, including station 1 work platforms	6/30/2010	
Design & fabricate fixtures, techniques and mockups for installation and alignment	6/30/2010	
4th of July Holiday	7/5-7/6/2010	Enjoy the long weekend
Receive & inspect components (installation, support & alignment)	7/15/2010	
Assemble Hemisperes	7/15/2010	
Mock installations/alignments, bench tests	7/31/2010	

RPC3 Pre Shutdown Prep

Task	Due By	NOTES
Order raw materials for PHENIX fabricated parts	Done	In Progress
Order purchased parts for RPC3 South	Done	In Progress
Prepare Installation Plan	4/30/2010	In Progress
Fabricate PHENIX parts	5/14/2010	In Progress
Receive and inspect CS fabricated parts	5/28/2010	In Progress
Memorial Day: Lab Holiday	5/31/2010	Enjoy the weekend
Prepare work permit for installation	6/1/2010	
Receive purchased parts	6/4/2010	
Assemble, test and burn-in 1/2 octants	6/18/2010	
Pre-Assemble base components at PHENIX	6/18/2010	

TECHNICAL SUPPORT 2010

PHENIX

TECHNICAL SUPPORT 2010

Start of Shutdown

Task	Due By	NOTES
DAQ Tests	6/4/2010	
Purge Gas From Detectors	6/8/2010	
Remove BP Collar	6/22/2010	As early as possible after 6/1
Move MMS south	6/22/2010	As early as possible after 6/1
Prep EC for move to EC	6/22/2010	As early as possible after 6/1
End of Run 10	6/23/2010	
EOR Party	~6/25/2010	
Close North and South BP gate valves and lock closed for until new BP is installed	6/24/2010	
Open and disassemble wall	6/24/2010	
Remove EC ladder and fold platforms	6/30/2010	
Move EC to AH	6/28/2010	
Install cart	6/28/2010	
Move Collars to AH	6/30/2010	
Install decking	6/30/2010	
Install Manlift	6/30/2010	
Remove RPC2 Prototype, support brackets, cabling & Piping	6/29/2010	
Remove MMS east vertical lampshade	6/30/2010	If Necessary (permit needed)

Beampipe De-installation

PHENIX

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
4th of July Holiday & Floating Holiday	7/5&7/6/2010	Enjoy
Remove HBD's and HBD cables Remove RXNP's and cables	7/9/2010	Concurrent with Start of shutdown tasks
Remove MPC's	7/16/2010	Concurrent w MPC's
Remove BBC's	7/16/2010	Concurrent with BBC's
Position MMS for Vacuum break	7/19/2010	
Install Temporary supports for old BP	7/19/2010	Supports TBD
Break vacuum on north side of MMS	7/19/2010	
Remove south bellows	7/19/2010	
Move MMS north, remove spool and south3-5 transition	7/20/2010	
Move the MMS south & Prep MMS for move to AH	7/23/2010	Begin MMS prep with shutdown start
Move CM south, remove north bellows	7/23/2010	
Move old Be bp south into MMS and move CM north	7/23/2010	
Move MMS to shutdown park position	7/23/2010	
Remove old Be BP	7/23/2010	
Move CM south and east	7/23/2010	
Remove north 3 to 5 transition	7/23/2010	

New Beampipe installation

PHENIX

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Prepare north 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	7/23/2010	CAD
Prep CM North and South for Absorber and install	8/13/2010	(Install if absorber rec'd)
Install north 3 to 5 transition in MMN	8/13/2010	
Install new Be pipe in CM on temp supports	8/17/2010	
Move CM back to beamline & connect new Be BP to 1-5/8 transition and bellows and north 3-5 transition	8/17/2010	
Move CM to run position	8/18/2010	
Prealign Be/Alum pipe with transitions attached on new BP supports At MPC north, BBC south and north nosecone	8/19/2010	
Prepare south 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	8/19/2010	
Install south 3 to 5 transition, bellows and 1-5/8 to 3" transitionin MMS	8/20/2010	
Move MMS back into IR on beamline	8/20/2010	
Move CM south, slide Transition assembly in MMS north and connect to new Be BP	8/20/2010	
Move CM and MMS north and install south spool. Leak check. Move MMS South	8/27/2010	
Install temporary bakeout supports	8/27/2010	
Install bakeout blankets and monitoring	8/27/2010	
Labor Day Lab Holiday	9/6/2010	Enjoy
Bakeout New BP and activate NEG coating	9/10/2010	How Long?
Leak check BP	9/10/2010	
Re-install MPC's including Cables and services Re-install BBC's including Cables and services	9/24/2010	Concurrent efforts
Move CM to run position	9/24/2010	
Final alignment of new BP	10/1/2010	

VTX Installation, VTX Services and Electronics

PHENIX

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Install and align VTX rail attachment hardware to CM	10/1/2010	Install during bakeout?
Install and align VTX rails parallel to beam line	10/8/2010	
Install and align VTX rails perpendicular to beam line	10/8/2010	
Install and align west half detector module	10/15/2010	
Install and align east half detector module	10/22/2010	
Thanksgiving and Black Friday Holiday	11/25 & 11/26/2010	Enjoy
Install mechanical support structures for VTX services and electronics	10/29/2010	Concurrent Effort
Install Cable trays	10/29/2010	|
Install racks	10/29/2010	|
Install chiller	10/29/2010	|
Install cables, plumbing	10/29/2010	|
Connect cables and plumbing	10/29/2010	V
Test and commission	12/1/2010	

RPC3 South Prep, Early Shutdown

PHENIX

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Remove wiring, walkovers, FCAL and scintillator hardware that would otherwise interfere with installation	7/2/2010	PHENIX
4th of July Holiday	7/5 & 7/6/2010	Enjoy
Remove/relocate shielding	7/9/2010	Riggers
Remove crystal palace & vapor barrier	7/16/2010	CAD
Inspect Gap 5 south for legacy items/problems	7/23/2010	
Address legacy items/problems as convenient prior to shutdown start	7/30/2010	
Install lighting & relocate sensors as necessary	8/6/2010	Electrrician
Temporarily relocate, re-position or otherwise address interfering piping, cable trays	8/20/2010	PHENIX (w/ CAD Help?), Electrician
Remove RPC prototype	8/20/2010	
Pre-survey $\frac{1}{2}$ octant reference points	8/27/2010	Surveyors
Drill and tap $\frac{1}{2}$ octant and rotating piston mounting points	8/31/2010	
Build/install access and work platforms for walk on top of MuID steel including stairs from MMS eyebrow	8/31/2010	Carpenters
Final cleaning and prep of gap 5 for grouting	9/3/2010	
Labor Day Lab Holiday	9/6/2010	Enjoy
Pre-installation orientation meeting with masons and riggers	9/7/2010	
Position lifting equipment in tunnel	9/10/2010	Riggers
Move east and west base structures into south tunnel and assemble on east and west sides of pedestal respectively. Include translation control fixtures	9/10/2010	Riggers & PHENIX techs

RPC3 South Installation

PHENIX

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Install and align base structures on east and west sides of gap 5	9/14/2010	
Prepare for grouting	9/15/2010	
Install grout	9/16/2010	
Install pitch control rails on pedestal and gap 5 east & west inner walls	9/17/2010	
Install upper suspension support hardware	9/17/2010	
Install ½ octants, 2 at a time in accordance with work plan/work permit		
Transport ½ octants 2 at a time from RPC factory to south tunnel on angled transport carts		
Transfer ½ octants from angled transport carts one at a time to temporary free standing and re-orienting roller fixture (fore and aft wheels and axel)		
Lift (and re-orient if appropriate) ½ octant and install into base structure, previously installed ½ octant or upper suspension hardawre as appropriate per work plan		
Pre-align each ½ octant as installed		
Perform electrical integrity tests before proceeding to next pair of ½ octants		
After all ½ octants are in place and tested, join east and west halves of full south station 3 detector and align to survey markers	10/15/2010	Riggers & PHENIX Techs

PHENIX

RPC3 South Integration

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Final survey	10/22/2010	Surveyors
Install new cable trays and piping supports	10/29/2010	Electrician, earlier if possible
Re-install MuID wiring and pipes	11/5/2010	
Re-install MuID gas rack	11/30/2010	
Install south thermal/vapor barrier	11/19/2010	CAD
Thanksgiving and Black Friday Holiday	11/25 & 11/26/2010	Enjoy
Re-install shielding	11/30/2010	Riggers
Commissioning and final acceptance tests	11/30/2010	RPC Group
Install RPC3 HV, LV and signal wiring and gas lines	11/30/2010	
Install RPC3 South gas distribution rack	11/30/2010	
Install RPC3 South environmental controls (heaters and thermostats)	11/30/2010	Electrician

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Shutdown 2010 Other Work

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
RPC3 North unfinished business	7/15/2010	Electronics and cabling, grounding issues, environmental controls
MuTrigger FEE unfinished business	7/15/2010	MMS cable trays,
RHIC Summer Sunday Tour	8/15/2010	During bakeout
Other subsystem maintenance and repair	11/1/2010	TBD
Gas System maintenance, repair, upgrade	11/1/2010	
Bridge Electrical support upgrade	11/1/2010	Support for 4 full racks in 2010, 4 more (8 total) in future
PHENIX Infrastructure maintenance, repair, upgrade	11/1/2010	TBD
DC/PC maintenance/repair	11/15/2010	FEM and wire troubleshooting and repairs, major efforts will require longer shutdon
Thanksgiving and Black Friday Holiday	11/25 & 11/26/2010	Enjoy
Rack Room upgrade	11/30/2010	TBD
Future upgrade support	11/30/2010	RPC1, RPC absorbers, FVTX, FOcal, other TBD
Prepare for Run 11	11/30/2010	Normal end of shutdown tasks, typically taking 3-4 weeks
Run 11 Start	12/1/2010	
End of Shutdown Party	~12/3/2010	

2009 Building Maintenance Issues

PHENIX

TECHNICAL SUPPORT 2010

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall and over door between control room and elect. ass'y room.

- General maintenance for Trailer Offices (in progress)
- Trailer Office Modifications planning in progress (new exterior siding?)

- New roof leaks in laser room and IR (southeast corner)
- Flooding in AH/ Driveway heaving [Lake PHENIX]

PHENIX Procedure Review Current Status:

147 Procedures Identified

84 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)

10 CAD procedures relevant to PHENIX, all are current and up-to- date. (CAD web access to these documents is not up to date)

42 PHENIX approved procedures.

1 is currently under review
41 are current and up-to-date

11 Proposed/Draft Procedures (never previously formalized)

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

Nothing new to report this week.

New Argon Dewar and Empty Gas Bottle Storage Area

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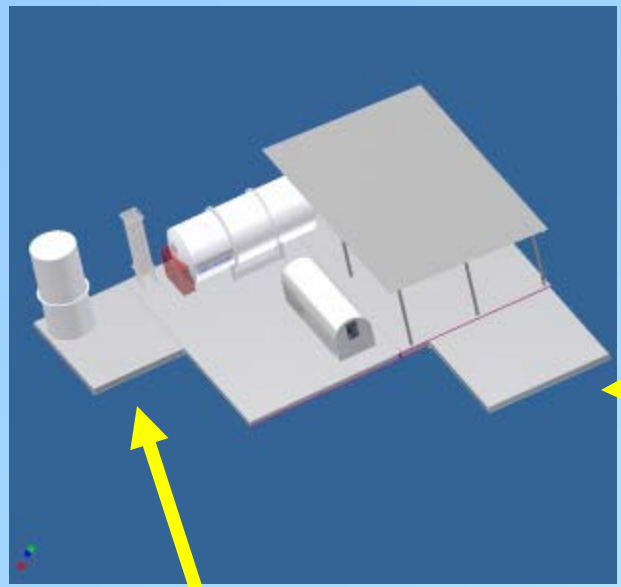
TECHNICAL SUPPORT 2010

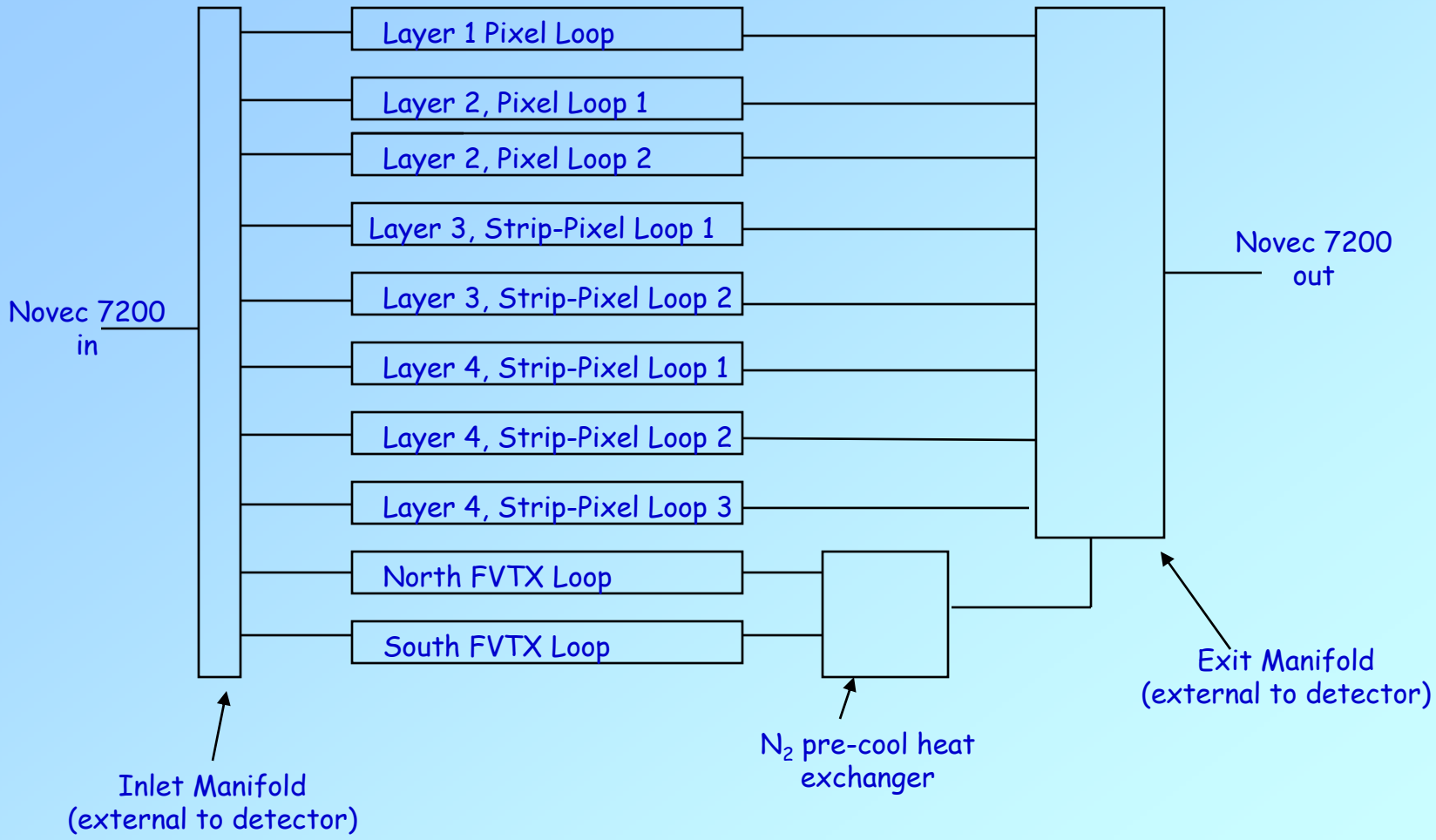


Pad for Empty Gas Bottles

Pad for argon Dewar

PO for material to fill cracks is in progress. PO for Ar Dewar installation and rental is in progress

VTX/FVTX Flow Schematic, ½ detector



VTX/FVTX Thermal Calculation Summary

PHENIX

TECHNICAL SUPPORT 2010

Layer	Coolant	Number of loops/layer	# Circuits in parallel per loop	# of passes in series per loop	Fluid Inlet Temperature		Inlet Pressure		Flow rate in circuit		Total flow rate in loop	
					°F	°C	psig	kPa	gpm	ml/sec	gpm	ml/sec
1	Novec 7200	1	3*	2	17.5	-8	20	137.895	0.137	8.64	0.274	17.29
2	Novec 7200	2	3*	2	17.5	-8	20	137.895	0.137	8.64	0.274	17.29
3	Novec 7200	2	2	2	17.5	-8	20	137.895	0.219	13.82	0.438	27.63
4	Novec 7200	3	2	2	17.5	-8	20	137.895	0.212	13.38	0.424	26.75
FVTX	Novec 7200	2	1	4	17.5	-8	20	137.895	0.3	18.93	0.3	18.93

Layer	Total Loop Heat Load		Fluid Outlet Temperature		Loop Pressure drop		Maximum Sensor Temperature		Notes
	BTU/hr	Watts	°F	°C	psid	kPa	°F	°C	
1	450	132	25.1	-3.9	10.0	68.9	67.1	19.5	2 circuits in 1st pass, 3 circuits in 2nd pass
2	450	132	25.1	-3.9	10.0	68.9	66.7	19.3	
3	340	100	21.1	-6.1	10.0	68.9	31.5	-0.3	
4	392	115	21.8	-5.7	10.0	68.9	32.2	0.1	
FVTX	500	146	25.2	-3.8	10*	68.9	65.8	18.8	* includesDisk 1 through 4 in series and N2 pre-cool heat exchenger

After determining internal flow requirements, the inlet and exit piping requirements were analyzed with the following results:

Flow: ~7.5 gpm
Piping length: 100 feet each, inlet and outlet
Inlet and outlet ambient heat gain: 1.4 kW (total for inlet and outlet assumes moderately insulated piping)
Pipe size: 1 inch ID
Piping pressure drop: 8.45 psid inlet and same for outlet (maximum allowed 10 psid both sides)

VTX/FVTX Chiller Requirements (not including "Big Wheels")

Coolant: Novec 7200

Flow rate: ~7.5 gpm

Coolant Supply Temp.: -9°C

Coolant Supply Pressure: 30 psig

Capacity: ~4 kW

Other: no copper piping to be used in coolant circuit.

VTX/FVTX readout electronics ("BigWheels") cooling analysis.

The analyses of the VTX and FVTX Big wheels considers the cooling problem as a series of conduction and convection heat flow analyses to determine the maximum temperature of the VTX and FVTX BigWheel mounted electronics as follows:

- Coolant bulk flow temperature rise (ΔT_b)
- Coolant bulk flow to tube wall (incl wall to tube OD) temperature rise (ΔT_w)
- Tube wall to BigWheel plate joint temperature rise (ΔT_j)
- Plate temperature rise (ΔT_p)
- Electronics card temperature rise (ΔT_c)

For the analyses it was assumed that the coolant source temperature was 10°C (50°F).

In addition, as several different electronics heat loads were reported, the greatest ones were used, and the average radial distance in the plate to the card heat load was calculated as a weighted average for the individual heatload sources form card components from information provided by Eric Mannel. For the joint temperature rise I assumed a joint thickness of .016" and calculated for both a thermal epoxy joint and a brazed joint. There was not enough information available to calculate the temperature rise from the aluminum plate to the hottest spot on the card, so a 10°C temperature rise was assumed for all cases, which is believed to be conservative.

PHENIX

Big Wheel Thermal Analysis Results

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Plate	Flow Rate ml/sec	Coolant In °C	ΔT_b °C	Δ Tw °C	ΔT_j (epoxy) °C	ΔT_j (braze) °C	ΔT_p °C	ΔT_c °C	Coolant out °C	Max Card Temp. °C (epoxy)	Max Card Temp. °C (braze)
1	23.7	10.0	1.3	1.7	14.8	0.2	11.2	10.0	11.3	49.0	34.4
2A	23.7	10.0	1.3	1.7	14.4	0.2	9.0	10.0	11.3	46.4	32.2
2B	23.7	10.0	1.3	1.7	14.4	0.2	9.0	10.0	11.3	46.4	32.2
3	23.7	10.0	1.9	2.7	23.4	0.4	13.0	10.0	11.9	61.0	38.0
4	23.7	10.0	2.9	3.8	32.5	0.5	18.0	10.0	12.9	77.1	45.2
FVTX	23.7	10.0	2.8	2.8	24.3	0.4	15.8	10.0	12.8	65.8	41.9

Plate	Heat Load per Card Watts	Heat Load per Plate Watts
1	20.5	102.5
2A	20.5	102.5
2B	20.5	102.5
3	19.6	156.4
4	19.6	234.6
FVTX	38.0	228.1

Conclusion: Use braze joint for tube attachment. Vacuum or dip braze.

VTX/FVTX Chiller Requirments ("Big Wheels")

Coolant: Ethylene Glycol/Water 60/40

Flow rate: 7.5 gpm (minimum)

Coolant Supply Temp.: 10 °C

Coolant Supply Pressure: 50 psig

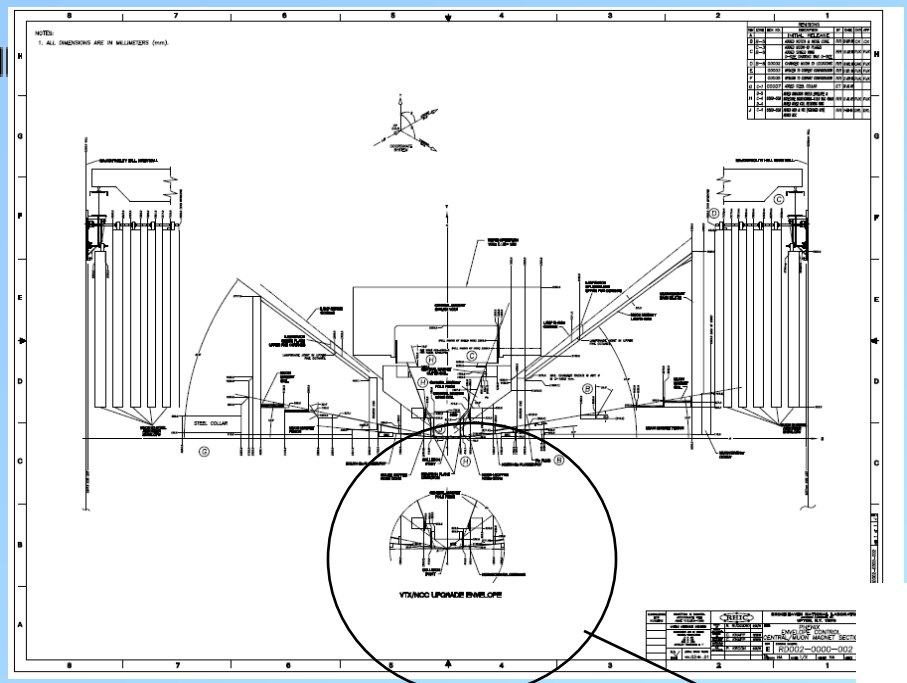
Capacity: ~3.0 kW minimum

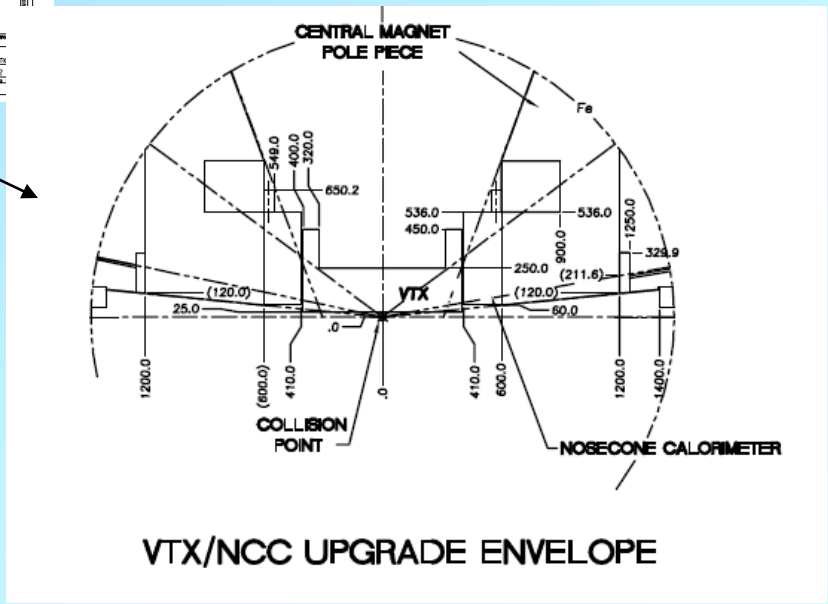
FVTX group request for extension of Space Envelope

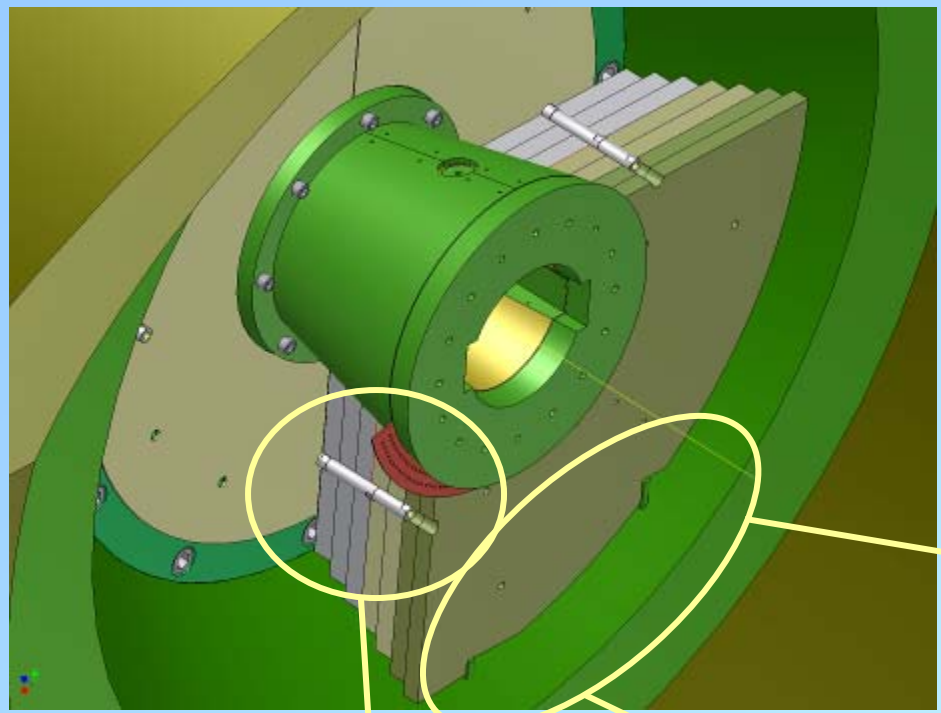
ReAny request for increase in the approved space envelope should be referred to the current space envelope as described in the relevant section of PHENIX drawing number RD002-0000-002, rev J, the current PHENIX space envelope drawing, where it refers to the VTX/NCC Upgrade Envelope. Please be reminded that all components of the FVTX/VTX are to be within the envelope labeled "VTX" on the drawing. This includes all sensors, internal support structure, readout electronics, internal cooling tubes, structural interface connections, electronics connectors, cooling connectors, gas enclosure, and internal cabling. This does not include the BNL designed external support structure, BNL installed cabling and cable management, BNL installed cooling and gas supply and return lines, external manifolds and external instrumentation.

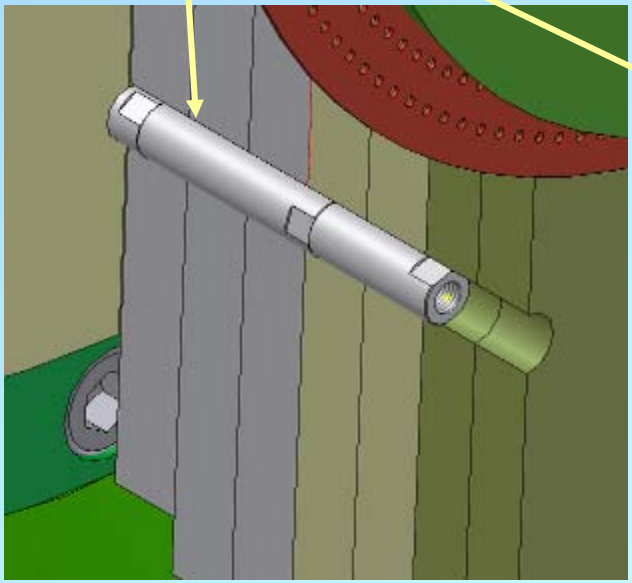
All space on the space envelope drawing which is not currently assigned to any detector subsystem is reserved for use by PHENIX engineering to support and service the PHENIX detector as a whole and may not be assumed to be available for any individual detector subsystem's purposes under any circumstance.

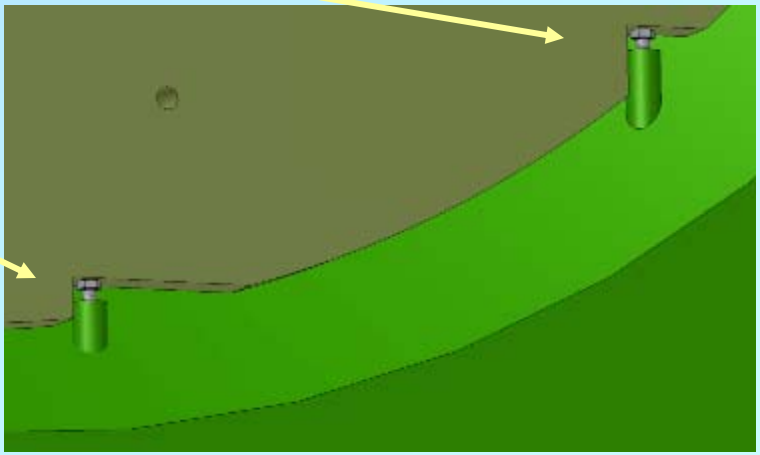
Any request for changes to the space envelope must be made in writing to the PHENIX integration group (comprised of PHENIX engineering and PHENIX management personnel). The integration committee will then make recommendations to the PHENIX detector Council which must ultimately approve any such changes.


VTX/NCC UPGRADE ENVELOPE


CENTRAL MAGNET
POLE PIECE
Fe
549.0
400.0
320.0
650.2
536.0
450.0
536.0
900.0
1250.0
329.9
250.0
(211.6)
(120.0)
VTX
(120.0)
25.0
60.0
.0
1200.0
(600.0)
410.0
.0
410.0
600.0
1200.0
1400.0
COLLISION
POINT
NOSECONE CALORIMETER
VTX/NCC UPGRADE ENVELOPE







RPC Absorber Final Design

- Welded & tapped vertical support bossess
- 3 stage positioning rod

Safety, Security, etc.

Upcoming ISO 18001 & 14001 Registration Audit.

This year, the audit starts the week of May 3.

This is earlier than usual. It is possible that personnel associated with C-AD experimental areas will be interviewed by the Registration Team as part of the audit.

All persons working in the experimental areas of RHIC are invited and encouraged to attend one of the 45 minute OSH/EMS Forums which are given as refreshers for the upcoming audit.

Any of you may attend any forum date below.

It is important to C-AD and BNL that we do well on the audit.

Forum Dates:

April 20 (Tuesday)
April 22 (Thursday)
April 27 (Tuesday)
April 29 (Thursday)

All sessions are 11:15 - 12:00 noon, Bldg 911 Snyder Seminar Hall.

* OSH: Occupational Safety & Health Management System
EMS: Environmental Management System

PHENIX

TECHNICAL SUPPORT 2010

Where To Find PHENIX Engineering Info

40 Working days until the start of the 2010 shutdown!

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm